Sheet classification : Restricted

National Aeronautical Laboratory	**Documentation Sheet**	*Document Classification* Restricted

Title :

EFFECT OF ASB-II BOMBS AND 800 LITRE DROP TANK ON THE AERODYNAMIC CHARACTERISTICS OF MIG-21 (M) AIRCRAFT

Document No. PD AE 8801

Date of issue: March 88

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Division : Aerodynamics

No. of copies: 20

External participation :

NAL Project No. NT-9-873

Sponsor : ARDE, PUNE

Sponsor's Project No.

Approval : Head, Aerodynamics Division 62

Remarks :

Keywords : MIG-21 (M), Bomb, Drop Tank, Longitudinal Stability.

Abstract :

A wind tunnel investigation was carried out to determine the effect of external stores on the longitudinal stability characteristics of MIG-21 (M) aircraft model. Stores mounted on the aircraft model were two 450Kg ASB II bombs on the two inboard pylons (one on each wing) and one 800 litre drop tank under the fuselage. The tests were carried out in the 1.2m tunnel at Mach numbers 0.6, 0.8, 0.9, 0.95, 1.0, 1.1 and 1.2 and in the incidence range of -5° to +10°. The test Reynolds number based on mean aerodynamic chord of the wing varied from 4.50 million to 6.0 million. Results of the tests were compared with that obtained earlier on the clean MIG-21 (M) aircraft and MIG-21 (M) aircraft with the 800 litre drop tank under the fuselage. Analysis shows with external stores there is an increase in zero lift drag coefficient and a decrease in the lift curve slope and static stability parameter.